

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

First named Applicant: Francis F. Cohan IV	Group Art Unit:
Application No.: 09/681,813 (CONF 5045)	2674
Filed: 6/9/2001	
Title: Finger-fitting pointing device	Examiner:
Attorney Docket No.: 1043.001US1	Kimnhung T. Nguyen

Assistant Commissioner for Patents  
Washington, D.C. 20231

**APPEAL BRIEF**

This Appeal Brief is organized in accordance with the requirements set forth in 37 CFR 1.192(c).

**Real party in interest**

The real party in interest in this patent application is Francis F. Cohan IV.

**Related appeals and interferences**

There are no related appeals or interferences to the present patent application.

**Status of claims**

Claims 1, 3-20 are pending in the patent application, and stand rejected, as summarized in the issue presented for appeal, below. Claims 1, 14, and 18 are independent claims, from which claims 3-13, 15-17, and 19-20 ultimately depend.

**Status of amendments**

Various of the claims were amended in the office action responses of January 31, 2004, and of November 9, 2005. All of the amendments made to the claims in these responses were entered. No outstanding amendments are present that have not been entered.

Summary of claimed subject matter

The invention relates to a pointing device (claim 1), such as those that are used with computers to direct a pointer on a screen in relation to a graphical user interface, such as those commonly found on such computers. (Patent application, paras. [0001]-[0002]) The pointing device of the invention particularly can include “a housing substantially shaped to fit a finger of the user, and ending in a grip.” (Claim 1; patent application, paras. [0016]-[0018]) Importantly, the “shape of the housing and the grip promotes normal usage of a tip of the finger of the user while the finger is inserted into the housing, including touch-typing.” (Claim 1; patent application, para. [0018], FIGs. 1 and 2) Thus, as can be seen from FIGs. 1 and 2 of the patent application as filed, a user inserts his or her fingers into the housings 102 and 104, which end in grips 108, where while the fingers are in the housings 102 and 104, the fingertips can still be used normally. For instance, the user can still use his or her fingers to touch-type even when the fingers are in the housings 102 and 104.

The pointing device also includes a “click sensor disposed within an underside of the housing,” which is “actuated by the user pressing on the underside of the housing through the finger against a first external surface with sufficient force.” (Claim 1) Thus, this is how the user uses the pointing device to select something on the screen, no different than if pressing a button on a mouse pointing device. The user presses the housing against an external surface with sufficient force to register an actuation, or a “click,” of the click sensor. (Patent application, para. [0020])

Finally, the pointing device includes an “optical sensor disposed within a surface of the housing,” which “detects relative movement of the surface of the housing . . . against a second external surface caused by relative movement of the finger of the user to cause a pointer on a screen of a computer to correspondingly move.” (Claim 1) Thus, this is how the user uses the pointing device to move a pointer on the screen, no different than if moving a mouse pointing device. The user moves his or her finger, which because the finger is in the housing, the housing

is movement, and this relative movement of the housing against an external surface is detected.  
(Patent application, para. [0017])

Grounds of rejection to be reviewed on appeal

For the purposes of this appeal, there is a single issue: whether the JP patent reference Hayashi (JP-1996-054980-A) discloses a housing/finger glove that is substantially shaped to fit a finger of a user, that (1) specifically “ends in a grip,” and where (2) specifically “a shape of the housing/finger glove and the grip promotes normal usage of a tip of the finger of the user while the finger is inserted into the housing/finger glove,” particularly “including touch-typing.” It is noted that while all of the claims have been rejected under 35 USC 103(a) over various references in combination with one another, all of these rejections have one thing in common – the Examiner has asserted that Hayashi discloses a housing/finger glove that is substantially shaped to fit a finger of a user, that (1) ends in a group, and where (2) a shape of the housing/finger glove and the grip promotes normal usage of the fingertip of the user while the user’s finger is inserted into the housing/finger glove. (Independent claims 1 and 14 particularly recite the terminology “housing” whereas independent claim 18 particularly recites the terminology “finger glove.” For the purposes of this appeal, the difference between a housing and a finger glove is not important, such that Applicant sometimes refers to them herein in combination as a housing/finger glove.)

For instance, claims 1, 3-4, and 6-8 have been rejected under 35 USC 103(a) as being unpatentable over Hayashi in view of Vance (2001/0040550). In this rejection, the Examiner has stated that Hayashi discloses a housing substantially shaped to fit a finger of a user and ending in a group, where the shape of the housing and the grip promotes normal usage of a tip of the finger of the user while the finger is inserted into the housing, including touch-typing. (Final Office Action, February 7, 2006, p. 4, para. 4) Claims 5 and 9-17 have been rejected under 35 USC 103(a) as being unpatentable over Hayashi and Vance, and further in view of Zloof (5,489,922). In this rejection, Hayashi is interpreted by the Examiner in the same way as it is

interpreted in relation to claims 1, 3-4, and 6-8. (Id., p. 5, para. 6) Claim 12 has been rejected under 35 USC 103(a) as being unpatentable over Hayashi in view of Vance and Zloof, and further in view of Iwasaki (2002/0024502). In this rejection, Hayashi is again interpreted by the Examiner in the same way as it is interpreted in relation to claims 1, 3-4, and 6-8. (Id., p. 8, para. 7)

For further instance, claims 18 and 20 have been rejected under 35 USC 103(a) as being unpatentable over JP patent reference Uminaga (JP 01-136225) in view of Hayashi. In this rejection, the Examiner states that Uminaga does not disclose the finger glove ending in a grip, where the shape of the finger glove and the grip promote normal usage of the user's finger tip while the user's finger is inserted into the finger glove, including touch-typing. (Final Office Action, February 7, 2006, p. 2, para. 2) Rather, Hayashi is again relied upon by the Examiner as disclosing these aspects of the claimed invention. (Id., p. 3, para. 2 continued)

Therefore, the common thread running through all of the Examiner's rejections of the pending claims is the reliance on Hayashi as teaching, disclosing, or suggesting a housing/finger glove (that is substantially shaped to fit a finger of a user) as (1) specifically "ending in a grip," and (2) where specifically "a shape of the housing/finger glove and the grip promotes normal usage of a tip of the finger of the user while the finger is inserted into the housing/finger glove," particularly "including touch-typing." All of the independent claims 1, 14, and 18 include these limitations, and Hayashi has been relied upon in combination with one or more other references in the rejections of all these claims as teaching these limitations. Applicant thus submits that insofar as Hayashi does not teach, disclose, or suggest these limitations, the rejections of the independent claims fail, such that the independent claims 1, 14, and 18 are patentable over the prior art of record. Therefore, all of the other pending claims are patentable, insofar as they depend from one of the independent claims 1, 14, and 18.

Applicant is very much cognizant of the fact that this single presented issue for appeal appears to attack a single reference, Hayashi, whereas all the rejections have been proffered by the

Examiner under 35 USC 103(a) over Hayashi in combination with one or more other references, and that attacking a single reference is not a proper response when a rejection is made on a number of references. That said, Applicant is not attacking just Hayashi in presenting this single issue for appeal as such. Rather, Applicant is showing how Hayashi does not teach the limitations of the claimed invention that the Examiner says that Hayashi does, such that Hayashi in combination with any other reference(s) does not teach all the limitations of the claimed invention. In other words, Applicant is attacking the overall combination of Hayashi with one or more other references by particularly showing how Hayashi does not disclose the aspects of the claimed invention that the Examiner says Hayashi discloses. Insofar as Hayashi does not disclose these aspects of the claimed invention, then any of the obviousness rejections made by the Examiner that rely upon Hayashi disclosing these aspects of the claimed invention necessarily fail. This is why Applicant has presented the single issue for appeal herein as whether or not Hayashi teaches various claim limitations, as it boils the standing rejections of the pending claims down to their *sine qua non*.

#### Grouping of claims

For purposes of this appeal only, Applicant groups all the pending claims within a single group, and selects claim 1 as representative of these claims. Claim 1 reads as follows (all the pending claims are listed at the end of this brief), where a particular portion of claim 1 has been emphasized as the point of contention in this appeal, as indicated above:

1. A pointing device comprising:

a housing substantially shaped to fit a finger of a user and ending in a grip, a shape of the housing and the grip promoting normal usage of a tip of the finger of the user while the finger is inserted into the housing, including touch-typing;

a click sensor disposed within an underside of the housing, the click sensor actuated by the user pressing the underside of the housing through the finger against a first external surface with sufficient force; and,

a optical sensor disposed within a surface of the housing, the optical sensor detecting relative movement of the surface of the housing along two axes against a second external surface caused by relative movement of the finger of the user to cause a pointer on a screen of a computer to correspondingly move,

wherein the first external surface and the second external surface are each external to the pointing device.

#### Argument

Applicant's argument can be summarized as follows. First, Hayashi does not teach, disclose, or suggest a housing that is substantially shaped to fit a finger of a user ending in a grip, "where the shape of the housing and the grip promote normal usage of a tip of the finger of the user while the finger is inserted into the housing, including touch-typing." Second, Hayashi does not teach, disclose, or suggest a housing that is substantially shaped to fit a finger of a user and that "ends in a grip." Each of these reasons why the claimed invention is patentable is independent and separate from one another. That is, if either (or both) of these reasons is agreed with by the Appellate Board, then the pending claims cannot stand rejected under 35 USC 103(a) over Hayashi in combination with one or more other references. Each of these reasons is now discussed in detail.

*First independent reason why claimed invention is patentable*

First, Hayashi does not teach, disclose, or suggest “the shape of the housing and the grip *promoting normal usage of a tip of the finger of the user while the finger is inserted into the housing, including touch-typing*,” as to which the claimed invention is limited. For example, to understand this limitation of the claimed invention, consider the embodiment of the invention depicted in FIG. 5 of the patent application as filed. A user could insert his or her finger into one of the housings 102 and 104, and still use the tip of that finger to touch-type on a keyboard, as well to achieve as other normal usage of this fingertip. That is, the shape of the housing and the grip *promote* normal usage of the fingertip in the claimed invention. As stated in paragraph [0018] of the patent application as filed, “the grips 108 allow the user to touch type and perform other activities that he or she normally would if his or her fingers were not inserted into the housing 102 and 104.”

By comparison, Hayashi in combination with any other reference, does not teach, disclose, or suggest a housing ending in a grip, where the shape of the housing and the grip *promote normal usage of a tip of the finger while the finger is inserted into the housing, including touch-typing*.” The Examiner has used Hayashi as the reference that teaches, discloses, or suggests this limitation of the claimed invention, as has been noted above. The housing of Hayashi, however, does not have a shape nor end in a grip that promotes normal usage of a fingertip inserted into the housing, including touch-typing. For instance, consider FIG. 2 of Hayashi. Paragraph [0017] of Hayashi says that you put your middle finger 4 into the housing 2, such that your index finger 5 rests on opening 11 and your ring (fourth) finger 6 rests on opening 12. In this configuration, there is no way you could use your fingertips to touch-type. The large shape of the portion 1 connected to the housing 2 prevents the middle fingertip from touch-typing, for instance, and because the index finger and the ring finger cover the openings 11 and 12, the index fingertip and the ring fingertip are likewise prevented from touch-typing. Thus, Hayashi in combination with any other reference does not have a housing ending in a grip that “promote normal usage of a tip

of the finger while the finger is inserted into the housing, including touch-typing.” Quite simply, you cannot normally use your fingertip, such as for touch-typing purposes, when it is inserted into the housing 2 of Hayashi in view of one or more other references.

Furthermore, Applicant notes that one of ordinary skill within the art could not modify Hayashi in view of any other reference in order to modify the teachings of Hayashi to disclose a housing and a grip that promote normal usage of a tip of the finger while the finger is inserted into the housing, including touch-typing, as to which the claimed invention is limited. The portion 1 of Hayashi, having openings 11 and 12 that are coverable by fingers 5 and 6, form an important part of the pointing device taught by Hayashi. For example, differently blocking openings 11 and 12 is crucial to how Hayashi works. Consider paragraph [0027] of Hayashi:

When finger is put in opening 11 for operation, outside light which is introduced into light guide 23 being done, shielding photoreceptor PD stops detecting light, this as for computer body recognizes as decision input.

In addition, when finger is put in opening 12 for operation, the outside light which is introduced into light guide 26 being done, shielding another photoreceptor PD stops detecting light, this as for computer body recognizes as escape input.

Thus, the user places his or her finger over the opening 11 to denote “decision input” in the pointing device of Hayashi, whereas he or she places his or her finger over the opening 12 to denote “escape input.” Without the portion 1 having the openings 11 and 12, Hayashi would not be able to function in these ways as intended. As stated in the MPEP, section 2143.01, “the proposed modification cannot render the prior art unsatisfactory for its intended purpose,” and “the proposed modification cannot change the principle of operation of a reference.” Thus, the portion 1 having the openings 11 and 12 is needed in Hayashi, and prevents Hayashi from being modified to “promote normal usage of a tip of the finger while the finger is inserted into the housing, including touch-typing” as to which the claimed invention is limited.

For this reason alone, then, the claimed invention is not rendered unpatentable over Hayashi in view of any other reference or references.



*Second independent reason why claimed invention is patentable*

Second, Applicant asserts that the prior art of record does not teach, disclose or suggest a housing that is substantially shaped to fit a finger of a user “ending in a grip” and where “a shape of the housing and the grip *promote normal usage of a tip of the finger of the user while the finger is inserted into the housing, including touch-typing.*” For instance, the Examiner has relied upon figures 1-2 and paragraph [0017] of Hayashi in particular as showing and describing a grip. However, neither of these figures, nor paragraph [0017] of Hayashi discloses or shows a housing that ends in a “grip.”

Applicant makes reference to FIG. 1 of the patent application as filed, for instance, which shows the grips 108 in accordance with an embodiment of the invention. Thus, the grip is a separate “thing” that is at the end of the housing. It is not simply the end or tip of the housing itself, if such an end or tip is not a “grip.” There is nothing in Hayashi in combination with any other reference that corresponds to such a grip of the claimed invention. In figures 1 and 2 of Hayashi, for instance, there is a housing 2, but it does not end in a grip; this housing may be close-ended (i.e., having an end or a tip), but it does not end in a grip. Furthermore, paragraph [0017] of Hayashi merely states the following:

elasticity attachment portion 2 is formed with synthetic rubber or other elastic component, elasticity recess 21 which top a little has aperture in posterior approaching is formed. elasticity recess 21 in order tip of middle finger to be possible to keep with predetermined suppleness, is formed to Okuhiro a little. When middle finger 4 is inserted in this elasticity recess 21, as shown in Figure 2, in order to be able to arrange index finger 5 and ring finger 6 on opening 11, 12 for respective operation, configuration it is done.

There is no mention of a grip in this paragraph at all. More specifically, there is no mention of the housing that is substantially shaped to fit a finger, such as the housing 2, ending in such a grip. For this reason alone as well, the prior art of record does not render the claimed invention obvious.

Conclusion

Applicant believes that the pending claims are in condition for allowance, and requests that they so be allowed, for the reasons described above.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Michael A. Dryja", written over a horizontal line.

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June 30, 2006  
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Claims Appendix: Listing of claims on appeal

1. (previously presented) A pointing device comprising:  
a housing substantially shaped to fit a finger of a user and ending in a grip, a shape of the housing and the grip promoting normal usage of a tip of the finger of the user while the finger is inserted into the housing, including touch-typing;  
a click sensor disposed within an underside of the housing, the click sensor actuated by the user pressing the underside of the housing through the finger against a first external surface with sufficient force; and,  
an optical sensor disposed within a surface of the housing, the optical sensor detecting relative movement of the surface of the housing along two axes against a second external surface caused by relative movement of the finger of the user to cause a pointer on a screen of a computer to correspondingly move,  
wherein the first external surface and the second external surface are each external to the pointing device.
2. (cancelled)
3. (original) The pointing device of claim 1, wherein the housing is fabricated from a flexible, glove-like material.
4. (previously presented) The pointing device of claim 1, wherein the finger of the user as to which the housing is specifically receptive is an index finger of the user.
5. (original) The pointing device of claim 1, further comprising:  
a second housing substantially shaped to fit a second finger of the user; and,

a second click sensor disposed within an underside of the second housing, the second click sensor actuated by the user pressing the underside of the second housing through the second finger against the first external surface with sufficient force.

6. (original) The pointing device of claim 5, further comprising a grip situated at an end of the second housing, the grip promoting normal usage of a tip of the second finger of the user.

7. (original) The pointing device of claim 5, wherein the second housing is fabricated from a flexible, glove-like material.

8. (original) The pointing device of claim 5, wherein the second finger of the user is a middle finger of the user.

9. (original) The pointing device of claim 1, further comprising a cable ending in a connector for connection to a corresponding connector of a computing device, such that the actuation of the click sensor and the relative movement detected by the optical sensor are registered with the computing device through the cable.

10. (original) The pointing device of claim 1, further comprising a wireless transceiver for wireless communication with a corresponding wireless transceiver of a computing device, such that the actuation of the click sensor and the relative movement detected by the optical sensor are registered with the computing device through the wireless communication.

11. (original) The pointing device of claim 10, further comprising:

a second housing attachable to a wrist of the user and in which the wireless transceiver is disposed; and,

a cable connecting the second housing to the housing.

12. (original) The pointing device of claim 11, further comprising an expansion slot disposed within the second housing and receptive to a corresponding expansion card, data stored on which is accessible to the computing device through the wireless communication.

13. (original) The pointing device of claim 1, wherein the first external surface and the second external surface are a same surface.

14. (previously presented) A pointing device comprising:

a first and a second housing, each housing substantially shaped to fit a finger of a user and ending in a grip, a shape of each housing and the grip promoting normal usage of a tip of the finger while the finger is inserted into the housing, including touch-typing;

a first and a second click sensor, each click sensor disposed within an underside of a corresponding one of the first and the second housing and actuated by the user pressing the underside of the corresponding one of the first and the second housing through the finger against a first external surface with sufficient force; and,

an optical sensor disposed within a surface of only the first housing, the optical sensor detecting relative movement of the surface of the housing against a second external surface caused by relative movement of the finger of the user that the first housing is substantially shaped to fit.

15. (original) The pointing device of claim 14, further comprising a grip situated at an end of each of the first and the second housings.

16. (original) The pointing device of claim 14, further comprising a cable ending in a connector for connection to a corresponding connector of a computing device, such that the actuation of the first and the second click sensors and the relative movement detected by the optical sensor are registered with the computing device through the cable.
17. (original) The pointing device of claim 14, further comprising a wireless transceiver for wireless communication with a corresponding wireless transceiver of a computing device, such that the actuation of the first and the second click sensors and the relative movement detected by the optical sensor are registered with the computing device through the wireless communication.
18. (previously presented) A pointing device comprising:  
a finger glove substantially shaped to fit a finger of a user and ending in a grip, a shape of the finger glove and the grip promoting normal usage of a tip of the finger of the user while the finger is inserted into the finger glove, including touch-typing;  
means for detecting actuation by the user disposed within the finger glove; and,  
means for detecting relative movement of the finger glove against an external surface external to the pointing device.
19. (previously presented) The pointing device of claim 18, further comprising:  
a second finger glove; and,  
means for detecting actuation by the user disposed within the second finger glove.
20. (original) The pointing device of claim 18, further comprising means for registering the actuation by the user and the relative movement detected with a computing device.

Evidence Appendix

(No evidence was submitted pursuant to Rules 130, 131, and 132, and therefore, this section is blank.)

Related Proceedings Appendix

(There are no related proceedings to this patent application, and therefore, this section is blank.)